

<b>Phase 2 - - Pre-Plan Formulation</b>				
<b>Activity No. 201 - - Define Water Supply Needs Criteria</b>				
<b>Item</b>	<b>Sub-Item</b>	<b>Objectives</b>	<b>Tasks</b>	<b>Primary Data Base</b>
201.1 Irrigation Dry-Year Water Shortage Criteria	201.1.1 Yakima River	201.1.1 For planning purposes, define dry-year water shortage criteria to be applied to established proratable rights while sustaining the agricultural economy of the Yakima River basin.	<p>1. Develop a scope of work of activities to define (1) the water supply required for full crop production, and (2) water shortages (%) that can reasonably be applied to established proratable rights in a dry year, and a sequence of dry years, without significant economic impact on the direct and indirect beneficiaries of irrigated agricultural production.</p> <p>2 Using a consultant or Reclamation's Technical Services Center conduct the study.</p>	
201.2 Instream Flow Assessment	201.2.1 Yakima River	201.2.1 Obtain consultant services for instream flow assessment.	1. Following the Request For Proposal process, select a consultant and adopt a scope of work for the instream flow assessment.	

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Activity No.202 - - Quantify Water Supply Needs				
		Note: In all of the following, a full water supply for nonproratable Project users is to be maintained in all years. The dry-year water supply criteria for proratable authorized rights are to be determined in Activity No. 201.1		
Item	Sub-Item	Objectives	Tasks	Primary Data Base
202.1 Irrigated Agriculture	202.1.1 Yakima River	202.1.1 Increase the proratable water supply to all Yakima Project users to a minimum of __% of established rights in years of proration	<p>1. Determine the irrigation and related purpose needs of those entities entitled to Project water as best evidenced by the January 2003 Watershed Management Plan (WMP) and more recent <u>Acquavella</u> Court records.</p> <p>2. Tabulate each entity's needs as to proratable and nonproratable. Further tabulate the proratable component to represent a ___% supply.</p>	<p>WMP, January 2003</p> <p><u>Acquavella</u> Court records</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
202.1 Irrigated Agriculture	202.1.2 Columbia River	Note: This analysis assumes all water rights (nonproratable and proratable) of participating irrigation entities will be served from the Columbia River in all years. This assumption is on the premise that even in non-proration years in the Yakima River basin, exchange water will be required to meet instream flow objectives. Should it be determined through the quantification of instream flow needs that this assumption is incorrect, further analysis will be required of the viability of considering the Columbia River only as an alternate water supply for dry-year needs.		
		202.1.2 Determine the water supply required to provide a full supply to those Yakima Project irrigation entities susceptible of receiving Columbia River water and willing to participate in a water exchange program. A full water supply consists of the sum of all authorized nonproratable water and (a) all proratable water in wet and normal water years, and (b) a minimum of ___% of proratable water in all years of proration.	<p>1. Based on the preliminary configuration of Black Rock project, identify Yakima River entities capable of receiving their irrigation supply (entire or partial) from the Black Rock project.</p> <p>2. For each identified entity, prepare a conceptual plan for irrigation service. Consult with each entity as to willingness to participate in the water exchange program.</p>	WIS “Black Rock Reservoir Study Final Report, May 2002”

Item	Sub-Item	Objectives	Tasks	Primary Data Base
			<p>3. For each “willing participant”, (a) prepare monthly maximum diversion demand schedules as currently exist for Yakima River water and as estimated for Columbia River water, and (b) prepare appraisal level design and cost estimates for water transmission works from the discharge end of the Black Rock Reservoir transmission line to the service area, including modifications to the participants delivery system as may be necessary.</p> <p>4. Identify and generally analyze for “fatal flaws” potential issues and impacts on water service contracts and water rights of the exchange participants and/or other existing water rights in the Yakima and Columbia River basins.</p> <p>5. Prepare a ranking analysis of the cost-effectiveness of serving the various potential participants.</p>	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
			6. Prepare a recommended appraisal-level plan for service from Black Rock Reservoir.	
202.2 Instream Flow Assessment	202.2.1 Yakima River	202.2.1 For planning purposes, develop hydrographs which define flow thresholds (volume and duration) for normative flows for the main stem Yakima and Naches Rivers.	<p>1. For planning purposes, determine and confirm the exterior boundaries of the five major floodplains under the conditions of (a) current floodplain development, and (b) floodplain expansion by selective removal of encroachments.</p> <p>2. Develop hydrographs for habitat and ecosystem restoration for each floodplain.</p> <p>3. Evaluate the relationship of the hydrographs developed for the five floodplains and recommend adjustments as may be required for compatibility of flows throughout the basin corridor. Recommend a normative flow regime for the Yakima River system.</p>	“The Reaches Project”, Stanford, et al, 2002

Item	Sub-Item	Objectives	Tasks	Primary Data Base
			4. Prepare a report of the work conducted and conclusions reached.	
202.3 Municipal	202.3.1 Yakima River	202.3.1 Maintain a full supply for existing users and provide additional water supply for population growth, consistent with State and local land use objectives to the year 2050	<p>1. Review and summarize the rationale and methodology contained in the WMP for determining municipal, industrial, and rural domestic water supply needs.</p> <p>2. Either adopt the WMP analysis or justify the need to make a modifications related to municipal use and future demands.</p> <p>3. Quantify the additional water supply needs through the year 2050.</p>	WMP, 2003

<b>Phase 2 - - Pre-Plan Formulation</b>				
<b>Activity No. 203 (Step 2) - - Inventory of Primary Water and Land Resource Conditions<sup>1</sup></b>				
<b>Item</b>	<b>Sub-Item</b>	<b>Objective</b>	<b>Tasks</b>	<b>Primary Data Base</b>
203.1 Surface Water Supply	203.1.1 Yakima River	203.1.1 Identify total annual current surface water supply	<p>1. Review prior reports pertaining to total current surface water supply.</p> <p>2. Prepare draft narrative of total current surface water supply conditions.</p>	<p>Watershed Assessment, June 2000 and technical report “Reliability of Surface Water Supply for Irrigation, January 2002”, MWG.</p> <p>YRBWEP Programmatic EIS</p> <p>Biological Assessment, Yakima Project Operations and Maintenance, August 2000.</p> <p>Interim Basin Operating Plan, November 2002.</p> <p>Black Rock Reservoir Study Final Report, May 2002.</p>

<sup>1</sup> This is an inventory of resource conditions related to primary needs as identified in PL 108-7 (February 20, 2003).

<b>Item</b>	<b>Sub-Item</b>	<b>Objective</b>	<b>Tasks</b>	<b>Primary Data Base</b>
	203.1.2 Columbia River	203.1.2 Identify total annual current surface water supply at Priest Rapids.	Same as Tasks 1 and 2.	
203.2 Irrigated Agriculture Lands	203.2.1 Yakima River	203.2.1 Identify current irrigated agriculture lands.	1. Review prior reports and prepare narrative description of the total Yakima Project irrigated lands.	Same as 203.1.1 “Primary Data Base”
203.3 Anadromous Fishery	203.3 .1 Yakima River	203.3.1 Identify current anadromous fishery by species and habitat conditions	1. Review prior reports and prepare narrative description of anadromous fishery and habitat conditions by “the reaches” identified in the 2002 Stanford report.	Same as 203.1.1 “Primary Data Base”  Technical report “Maintain and Enhance Habitat”, April 2002, R.C. Bain & Associates. report.  “The Reaches Report”, Jack Stanford et al, 2002
	203.3.2 Columbia River	203.3.2 Identify current anadromous fishery by species and the habitat in the Hanford Reach.	1. Review prior reports and prepare narrative description of anadromous fishery and habitat conditions in the Hanford Reach.	Public Utility District No. 2 of Grant County Draft License Application for Priest Rapids, April 2003.



<b>Item</b>	<b>Sub-Item</b>	<b>Objective</b>	<b>Tasks</b>	<b>Primary Data Base</b>
203.4 Municipal Supply	203.4.1 Yakima River	203.4.1 Determine and describe the current use of Yakima River basin surface water for municipal purposes.	1. Review prior reports and identify those cities and towns currently receiving all or part of their municipal supply from surface water and quantify the current peak day and annual use.	WMP, January 2003.

Phase 2 - - Pre-Plan Formulation				
Activity No. 204 - - Water Supply Deficiency				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
204.1 Irrigated Agriculture	204.1.1 Yakima River	204.1.1 Determine the amount of water supply shortage to proratable water users in proration years.	<p>1. Using information compiled in 202.1, Tasks 1 and 2, identify the individual entity and aggregate water needs of proratable users based on the dry-year criteria determined in 201.1.</p> <p>2. Assume the historic proration of 67% (37% supply received in years 1994 and 2001) of established rights as the indicator of the maximum supply deficit. Calculate individual entity and total system supply deficiencies as the difference between a ___% and 37 % supply.</p>	<p>WMP, January 2003</p> <p>Acquavella Court records</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	204.1.2 Columbia River	204.1.2. Determine the extent to which the block of exchange water resulting from the Black Rock project could offset the Yakima Basin irrigation water supply deficiency in proration years on the assumption that proratable rights have a first priority to use of the exchange water.	<p>1. Based on the identification in 202.1, of those irrigation entities potentially participating in the exchange program, quantify the block of Yakima Project water that would be available for irrigation use by others in proration years.</p> <p>2. Compare the irrigation supply “deficiency” as determined in 204.1.1 (excluding the proratable component of the rights of those entities receiving Black Rock water) with the block of Yakima Project exchange water determined in Task 1. Determine extent which the exchange supply meets the Yakima Basin dry- year irrigation supply objectives.</p>	

Item	Sub-Item	Objectives	Tasks	Primary Data Base
204.2 Instream Flows	204.2.1 Yakima River	204.2.1 Determine the increment of additional water supply required to provide normative flows under the conditions of (a) current floodplain development, and (b) floodplain expansion through selective removal of encroachments.	1. Based upon the hydrograph comparison conducted in 202.2, determine the annual deficiency in supply for providing normative flows under the two flow regime scenarios of described in 202.2	.
204.3 Municipal	204.3.1 Yakima River	204.3.1 Quantify the additional surface water supply required to meet municipal needs to the year 2050.	1. Note: This quantification/determination is a product of 202.3.1, Tasks 1 thru 3. No further work is required.	

Phase 2- - Pre-Plan Formulation				
Activity No. 205 - - Quantify Surface Water Supply Available				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
205.1 Available Supply	205.1.1 Yakima River	205.1.1.1 Quantify the amount of surface water physically available for additional use at proposed storage augmentation sites under (1) current operating conditions, and (2) future operating conditions as defined in Activity 302.1 as the “Future Without Project”.	<p>1. Identify the primary components of operational practices; i.e. how the system is operated and managed for current and proposed future operating conditions.</p> <p>2. Through model simulation operations, estimate the monthly and annual water available for storage augmentation at the Bumping and Wymer dam sites, and for transfer by a Kacheless to Kachess pipeline. Conduct the analysis individually and collectively for the sites/projects for current and future operating conditions.</p>	<p>Interim Operating Plan, CAG, 2002.</p> <p>River Ware and RVA Models</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
			3. Conduct sizing studies based on the determination of availability of water for storage to either confirm prior reservoir capacities or develop new alternate capacities.	
		205.1.1.2 Determine the extent to which waters currently available for additional storage/use are (a) already appropriated by Reclamation, or (b) subject to appropriation by Reclamation under existing authorities, or (c) where new authority may be required.	<p>1. Conduct an analysis of existing Federal water rights and the pending withdrawal of Yakima River unappropriated water for applicability to new storage alternatives.</p> <p>2. Based on results of 205.1.1, Tasks 1 and 2, (a) quantify availability of water for additional storage, and (b) identify water right requirements necessary to authorize the appropriation and use of additional water.</p>	State and Reclamation records.

Item	Sub-Item	Objectives	Tasks	Primary Data Base
	205.1.2 Columbia River	205.1.2.1 Determine the extent waters are available at Priest Rapids Dam to meet the WIS alternate Black Rock project proposals of (a) a diversion rate of 4,000 cfs and storage of 1,700,000 af/yr, (b) 2,000 cfs and storage of 860,000 af/yr, and (c) 2,000 cfs and no storage.	<p>1. Identify and document current (a) flow objectives and criteria recognized by Federal agencies and by the Grant County Public Utility District at Priest Rapids Dam, and (b) flows (quantity and time) in excess of 1(a).</p> <p>2. Using information from 202.2.1, determine total diversion requirements of potential exchange participants at the Columbia River.</p> <p>3. Conduct sizing studies to either confirm WIS alternate Black Rock project proposals or develop new alternates as may be required to provide Columbia River water to potential exchange participants.</p>	<p>Black Rock Reservoir Study Final Report, 2002</p> <p>Public Utility District No. 2 of Grant County Draft License Application for Priest Rapids, April 2003.</p>

Item	Sub-Item	Objectives	Tasks	Primary Data Base
		205.1.2.2 Determine the appropriate action and procedure for acquiring rights to appropriate and store sufficient water from the Columbia River to operate a potential Black Rock project.	<p>1. Define (a) State policies, rules, and regulations, including mitigation requirements for acquiring water rights authorization for a Black Rock project, and (b) objectives of the Columbia River Initiative as it may effect future appropriations.</p> <p>2. Estimate the nonconsumptive “water budget” of the proposed Black Rock project; i.e. the quantity and time sequence of (a) water returned to the Columbia River via Yakima River return flows, and (b) increase in Yakima River discharge to the Columbia River due to the “exchange” and its use for instream flows.</p>	



Item	Sub-Item	Objectives	Tasks	Primary Data Base
			<p>3. Evaluate the potential of acquiring State water rights through the Federal withdrawal provisions of 90.40 RCW.</p> <p>4. Summarize findings and provide recommendations for acquiring water right authorization.</p>	

Phase 2 - - Pre-Plan Formulation				
Activity No. 206 - - Data Collection and Evaluation				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
206.1 Economic Benefits		206.1.1 Develop monetary unit values for irrigated agriculture, fishery, municipal, recreation and other benefits which may be associated with potential water storage projects.	1. Conduct literature survey (primarily anadromous fishery).  2. Gather and analyze data and develop unit values.  3. Prepare documentation of information.	
206.2 Water Quality		206.2.1 Assess water quality characteristics of potential water storage projects.	1. Review existing water quality information and determine data gaps.  2. Collect additional data as necessary.  3. Evaluate data and document conclusions.	“Watershed Assessment, June 2000”  Reclamation and USGS data.

Item	Sub-Item	Objectives	Tasks	Primary Data Base
206.3 Biological and Environmental Support		206.3.1 Determine and collect data necessary for plan formulation associated with the defined resource aspects identified in 103.9, Task 2.	<p>1. Identify those specific actions/studies necessary to evaluate the defined resource aspects in 103.9, Task 2.</p> <p>2. Initiate the specific actions and collect and conduct analyses of data related to the defined resource aspects.</p> <p>3. Determine the appropriate methodologies/models to use to address the defined resource aspects.</p>	

Phase 2 - - Pre-Plan Formulation				
Activity No. 207 - - Interim Report				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
207.1 Prepare Interim Report		207.1.1 Provide interim report on pre-plan formulation activities and status of other activities.	1. Prepare report on (a) pre-plan formulation activities and findings and conclusions (activities 201 through 206), and (b) status of other ongoing and proposed activities.	

Phase 2 - - Pre-Plan Formulation				
Activity No. 208 - - Public Involvement				
Item	Sub-Item	Objectives	Tasks	Primary Data Base
208.1 Public Involvement (PI) Program		208.1.1 Conduct PI Program activities related to Phase 2.	1. Identify appropriate activities for implementation from the PI Plan developed in 103.11.  2. Conduct appropriate activities.	